



IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A method for reducing a chromium-containing material, comprising a mixing step of mixing a chromium-containing material comprising chromium oxide and iron oxide and a carbonaceous reductant to provide a mixture; and a reducing step of heating, and reducing the mixture with a rapid temperature rise by radiation heating in a moving hearth furnace to provide a reduced mixture, wherein the average rate of raising the temperature of the mixture in the reducing step is 13.6°C/s or higher in the period from the initiation of the radiation heating of the mixture until the mixture reaches 1,114°C.

Claim 2 (Canceled).

Claim 3 (Previously Presented): The method for reducing a chromium-containing material according to Claim 1, wherein the reducing step is performed at 1,250°C to 1,400°C.

Claim 4 (Previously Presented): The method for reducing a chromium-containing material according to Claim 1, further comprising a reducing and melting step of melting the reduced mixture provided in the reducing step by successive radiation heating to provide a reduced molten material.

Claim 5 (Original): The method for reducing a chromium-containing material according to Claim 4, further comprising a solidifying step of cooling and solidifying the reduced molten material provided in the reducing and melting step in the moving hearth furnace to provide a reduced solid; and a separating step of separating the reduced solid into metal and slag.



Claim 6 (Previously Presented): The method for reducing a chromium-containing material according to Claim 4, wherein the reducing step is performed at 1,250°C to 1,400°C; and the reducing and melting step is performed at a temperature higher than that in the reducing step within the range of 1,350°C to 1,700°C.

Claim 7 (Previously Presented): The method for reducing a chromium-containing material according to Claim 1, wherein a carbonaceous atmosphere-adjusting agent is charged together with the mixture onto the hearth of the moving hearth furnace in the reducing step.

Claim 8 (New): The method for reducing a chromium-containing material according to Claim 1, wherein the reducing step is performed at 1,300°C to 1,400°C.

Claim 9 (New): A method for reducing a chromium-containing material, comprising a mixing step of mixing a chromium-containing material comprising chromium oxide and iron oxide and a carbonaceous reductant to provide a mixture; and a reducing step of heating, and reducing the mixture with a rapid temperature rise by radiation heating in a moving hearth furnace to provide a reduced mixture, wherein the chromium reduction degree at a time t , in seconds, is represented by the following formula :

$$R_{Cr}(\%) = A(1 - \exp(-t/\tau)) + k,$$

wherein R_{Cr} is the Cr reduction degree; τ is a time constant; and A and k are constants, and the chromium-containing material is subject to radiation heating for a residence time of from 1τ to 8τ .

Claim 10 (New): A method for reducing a chromium-containing material, comprising a mixing step of mixing a chromium-containing material comprising chromium oxide and iron oxide and a carbonaceous reductant to provide a mixture; and a reducing step of heating, and reducing the mixture with a rapid temperature rise by radiation heating in a moving hearth furnace to provide a reduced mixture, wherein the chromium-containing material is subject to radiation heating for a residence time of from 5.3 to 42.7 minutes.

Claim 11 (New): A method for reducing a chromium-containing material, comprising a mixing step of mixing a chromium-containing material comprising chromium oxide and iron oxide and a carbonaceous reductant to provide a mixture; and a reducing step of heating, and reducing the mixture with a rapid temperature rise by radiation heating in a moving hearth furnace to provide a reduced mixture, wherein Fe metallization degree does not reach 50% prior to the mixture having reached a temperature of 1,114°C.



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DISCUSSION OF THE AMENDMENT

Claim 1 has been amended by incorporating the subject matter of Claim 2 therein;

Claim 2 has been canceled.

New Claims 8-11 have been added. Claim 8 is supported in the specification at page 26, the last sentence of the last full paragraph. Claims 9 and 10 are supported in the specification beginning at page 26, first full paragraph through the end of the paragraph bridging pages 26 and 27. Claim 11 is supported in the specification at lines 4-6 of the paragraph bridging pages 27 and 28.

Claims 1 and 3-11 are now pending in the application. No new matter is believed to have been added by the above amendment.